Metal Oxide Resistors, Special Purpose, High Voltage

FEATURES

- Low TCR: ± 200 ppm/°C standard; ± 100 ppm/°C; ± 50 ppm/°C available
- Tolerance: ± 1 % standard to 1 GΩ; ± 5 % above 1 GΩ; ± 0.5 % available in ± 50 ppm/°C only. Special tolerance and / or temperature coefficient matching available
- High voltage (up to 8 kV)
- For oil bath or open air operation
- Matched sets available
- Special testing available upon request
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb Available

e3 RoHS* Available

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING			MAXIMUM WORKING VOLTAGE (2) V	RESISTANCE RANGE (3) Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C
		$P_{25\,°C}$ (1) W	$P_{70\,°C}$ (1) W	$P_{125\,°C}$ (1) W				
RNX025	RNX-1/4	0.5	0.36	0.25	750	1M to 22M	0.5, 1, 2, 5, 10	50
						1K to 100M	1, 2, 5, 10	100, 200
						100 to 100K	1, 2, 5, 10	Non-inductive (4)
RNX038	RNX-3/8	1.0	0.72	0.5	1.5K	1M to 50M	0.5, 1, 2, 5, 10	50
						1K to 100M	1, 2, 5, 10	100
						1K to 1G	1, 2, 5, 10	200
						100 to 100K	1, 2, 5, 10	Non-inductive (4)
RNX050	RNX-1/2	1.2	0.86	0.6	2K	1M to 100M	0.5, 1, 2, 5, 10	50
						1K to 250M	1, 2, 5, 10	100
						1K to 2G	1, 2, 5, 10	200
						100 to 100K	1, 2, 5, 10	Non-inductive (4)
RNX075	RNX-3/4	2.0	1.44	1.0	3K	1M to 100M	0.5, 1, 2, 5, 10	50
						1K to 500M	1, 2, 5, 10	100
						1K to 2G	1, 2, 5, 10	200
						100 to 100K	1, 2, 5, 10	Non-inductive (4)
RNX100	RNX-1	2.5	1.8	1.25	4K	1M to 100M	0.5, 1, 2, 5, 10	50
						1K to 500M	1, 2, 5, 10	100
						1K to 2G	1, 2, 5, 10	200
						100 to 1M	1, 2, 5, 10	Non-inductive (4)
RNX125	RNX-1-1/4	3.0	2.16	1.5	5K	1K to 500M	1, 2, 5, 10	100
						1K to 2G	1, 2, 5, 10	200
						100 to 1M	1, 2, 5, 10	Non-inductive (4)
RNX150	RNX-1-1/2	4.0	2.88	2.0	6K	1K to 500M	1, 2, 5, 10	100
						1K to 2G	1, 2, 5, 10	200
						100 to 1M	1, 2, 5, 10	Non-inductive (4)
RNX200	RNX-2	5.0	3.6	2.5	8K	1K to 500M	1, 2, 5, 10	100
						1K to 2G	1, 2, 5, 10	200
						100 to 1M	1, 2, 5, 10	Non-inductive (4)

Notes

- **All resistance values are calibrated at 100 V_{DC}. Calibration at other voltages available**
- Part marking: Print marked - DALE, model, value, tolerance, TCR, date code (model and date omitted on RNX-1/4)
- Special modifications:
  - Special preconditioning (power aging, temperature cycling etc.) to customer specifications
  - Non-helixed resistors can be supplied for critical high frequency applications (non-inductive)

(1) Increase wattage by 25 % for 0.032" (0.813 mm) diameter leads

(2) Continuous working voltage shall be $\sqrt{P \times R}$ or maximum working voltage, whichever is less

(3) For resistance values above and below those listed please contact us

(4) Non-inductive ± 200 ppm/°C TCR only

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RNX025	RNX038	RNX050	RNX075	RNX100	RNX125	RNX150	RNX200
Insulation Resistance	Ω	≥ 10^{11}							
Category Temperature Range	°C	Epoxy coated = - 55/+ 150; silicone coated = - 55/+ 225							

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: RNX05010K0KKLB (preferred part numbering format)

R	N	X	0	5	0	1	0	K	0	K	K	L	B				

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	TEMP. COEFFICIENT	PACKAGING (1)	CONSTRUCTION	SPECIAL
(See Standard Electrical Specifications table)	**R** = Ω **K** = kΩ **M** = MΩ **G** = GΩ **910R** = 910 Ω **10M0** = 10 MΩ **1G00** = 1.0 GΩ	**D** = ± 0.5 % **F** = ± 1 % **G** = ± 2 % **J** = ± 5 % **K** = ± 10 %	**H** = 50 ppm **K** = 100 ppm **N** = 200 ppm	**EL** = Lead (Pb)-free, lacer **EE** = Lead (Pb)-free, T/R (1/4, 3/8, 1/2, 3/4, 1 only) **LB** = Tin/lead, lacer **RC** = Tin/lead, T/R (1/4, 3/8, 1/2, 3/4, 1 only)	Blank = Standard **N** = Non-inductive **P** = 0.032" Ø leads	Blank = Standard (Dash number) (Up to 3 digits) From **1 to 999** as applicable

Historical Part Number example: RNX-1/210K0KK (will continue to be accepted)

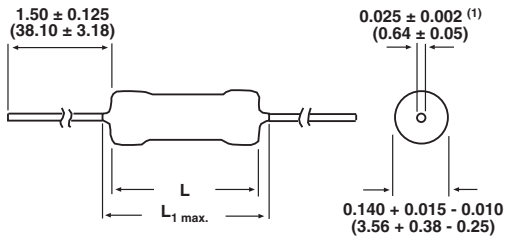
RNX-1/2		10K0	K	K	L05
HISTORICAL MODEL	CONSTRUCTION	RESISTANCE VALUE	TOLERANCE CODE	TEMP. COEFFICIENT	PACKAGING

Notes

(1) Some packaging codes are model specific

- For additional information on packaging, refer to the Through-Hole Resistor Packaging document (www.vishay.com/doc?31544)

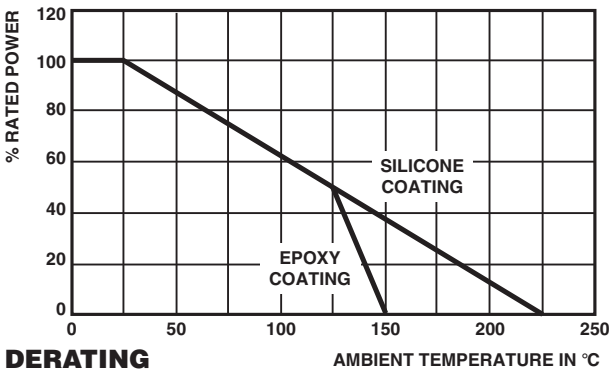
DIMENSIONS in inches (millimeters)



GLOBAL MODEL	L	$L_{1\ MAX.}$
RNX025	0.290 ± 0.020 (7.37 ± 0.51)	0.358 (9.09)
RNX038	0.420 ± 0.020 (10.67 ± 0.51)	0.470 (11.94)
RNX050	0.540 ± 0.020 (13.72 ± 0.51)	0.595 (15.11)
RNX075	0.790 ± 0.020 (20.07 ± 0.51)	0.845 (21.46)
RNX100	1.040 ± 0.020 (26.42 ± 0.51)	1.100 (27.94)
RNX125	1.290 ± 0.020 (32.77 ± 0.51)	1.350 (34.29)
RNX150	1.540 ± 0.020 (39.12 ± 0.51)	1.600 (40.64)
RNX200	2.040 ± 0.020 (51.82 ± 0.51)	2.100 (53.34)

Note

(1) Available with 0.032" (0.813 mm) leads ± 0.002" (0.051 mm)

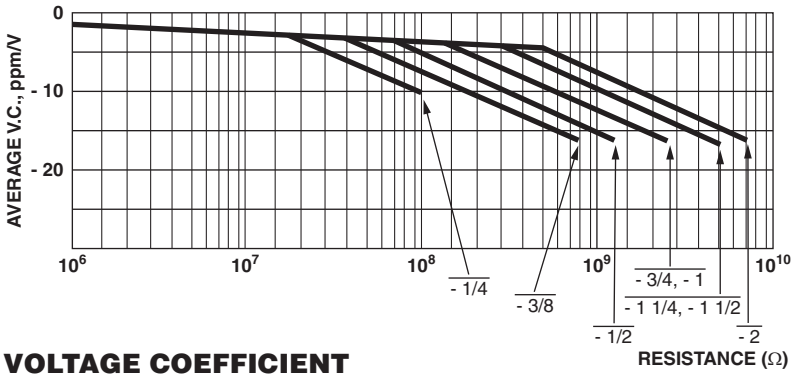


MATERIAL SPECIFICATIONS

Element	High temperature fired cermet film
Core	High purity 96 % alumina
Coating	Flame-retardant epoxy on RNX025 and RNX038, flameproof silicone on RNX050 to RNX200
Termination	Standard lead material is solder-coated copper. Solderable and weldable.

MECHANICAL SPECIFICATIONS

Terminal Strength	5 pound pull test
Solderability	Continuous satisfactory coverage when tested in accordance with MIL-STD-202, method 208



VOLTAGE COEFFICIENT

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.